

Oenothera hungarica Borbás, Kert 1902: 204. 1902; Magyar Bot. Lap. 2: 247. 1903. TYPE: Naturalized in Hungary.

Oenothera strigosa (Rydb.) Mack. & Bush subsp. *canovirens* (Steele) Munz, N. Amer. Fl., ser. 2, 5: 136. 1965.

***Oenothera villosa* subsp. *strigosa* (Rydb.) Dietrich & Raven, comb. nov.**

Based on *Onagra strigosa* Rydb., Mem. New York Bot. Gard. 1: 278. 1900. LECTOTYPE: Montana, Madison Co., Pony, 8 and 12 July 1897, P. A. Rydberg & E. A. Bessey (NY); Munz, N. Am. Fl., ser. 2, 5: 136. 1965.

Oenothera strigosa (Rydb.) Mack. & Bush, Fl. Jackson Co., Missouri 139. 1902.

***Oenothera villosa* subsp. *cheradophila* (Bartlett) Dietrich & Raven, comb. nov.**

Based on *Oenothera cheradophila* Bartlett, Bot. Gaz. (Crawfordsville) 44: 302. 1904. TYPE: Washington, Klickitat Co., Bingen, low sandy river bank, 20 August 1906, W. N. Suksdorf 5860 (GH).

Oenothera strigosa (Rydb.) Mack. & Bush var. *cheradophila* Gates, Rhodora 59: 15. 1957.

Oenothera strigosa (Rydb.) Mack. & Bush subsp. *cheradophila* (Bartlett) Munz, N. Amer. Fl., ser. 2, 5: 136. 1965.

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SPECIFIC STATUS FOR *CAMISSONIA CLAVIFORMIS* SUBSP. *WIGGINSII* (ONAGRACEAE)

Of the 11 subspecies of the highly polymorphic *Camissonia claviformis* (Torr. & Frém.) Raven recognized in my revision of the genus (Raven, 1969), one, subsp. *wigginsii* (Raven) Raven, is endemic to Mexico. All ten other subspecies, which occur from southeastern Oregon and adjacent Idaho to northeastern Baja California, Arizona, and northwestern Sonora, are genetically self-incompatible, with the stigma held well above the anthers at anthesis. Judged from the very few available herbarium specimens, the same was thought to be true of subsp. *wigginsii*: the stigma apparently was elevated above the anthers, and despite the appearance of the flowers, which are much smaller than in any of the other subspecies, it was earlier judged to be outcrossing also (Raven, 1969: 221).

On 27 March 1972, I had the opportunity to study a small population of this taxon, growing with *Camissonia cardiophylla* (Torr.) Raven subsp. *cedrosensis* (Greene) Raven on the sandy floor of the Arroyo de Calamajué ca. 70 km south

of Bahía San Luis Gonzaga (*Raven 26061*, MO), in a plant community dominated by *Prosopis*, with *Washingtonia* and *Juncus* frequent along the wash. In these living plants, it was evident that the flowers were highly autogamous, the anthers being appressed directly to the stigma at anthesis. In view of this important biological discontinuity between them and the other elements grouped as *Camissonia claviformis*, the following new combination becomes appropriate:

Camissonia wigginsii (Raven) Raven, stat. nov.

Based on *Oenothera clavaeformis* Torr. & Frém. subsp. *wigginsii* Raven, Univ. Calif. Publ. Bot. 34: 103. 1962.

Camissonia claviformis (Torr. & Frém.) Raven subsp. *wigginsii* (Raven) Raven, Brittonia 16: 282. 1964.

Dr. William Tai examined fixed material of *Raven 26061*, and found 7 bivalents at diakinesis. This is in agreement with my earlier report of the chromosome number of the taxon (Raven, 1969: 221).

Camissonia wigginsii has yellow petals 1.5–2 mm long, filaments 1.5–2 mm long, and a style 5–7 mm long, whereas *C. claviformis* has white or yellow petals 2.5–8 mm long, filaments 2–5.5 mm long, and a style 7–16 mm long. As mentioned above, the stigma is elevated above the anthers in all ten subspecies of *C. claviformis*, and they are uniformly genetically self-incompatible. In contrast, the anthers surround and shed pollen directly on the stigma in *C. wigginsii*, which is therefore highly autogamous. *Camissonia wigginsii* seems to have been derived from populations of *C. claviformis* similar to those that are closest geographically and most similar morphologically, namely *C. claviformis* subsp. *peirsonii* (Munz) Raven and *C. claviformis* subsp. *rubescens* (Raven) Raven. The derivative *C. wigginsii*, a local endemic of central Baja California from 150–600 m elevation, is separated from the nearest populations of its presumed ancestral species by a gap of some 120 km. Thus the relationship between *C. wigginsii* and *C. claviformis* is similar to that between *Oenothera brandegeei* (Munz) Raven, a rare autogamous annual species of central Baja California, and *O. caespitosa* Nutt., a polymorphic self-incompatible perennial of the southwestern United States from which it has undoubtedly been derived (Raven, 1970). In both genera, the autogamous derivative taxa in central Baja California probably have evolved in relation to spreading aridity in the late Pleistocene or subsequently.

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